Application No. 10/511931
Response to Office Action Dated 08/28/2007

REMARKS

Applicants request reconsideration of the claims in view of the remarks submitted herewith. The claims are not amended in this response; claims 1, 5, 6, 9, 14-20, 23-27, 32, 35, 41-46 and 49-52 are pending.

The rejection under 35 U.S.C. §102(b)

Applicants maintain their traversal of the rejection of claims 1, 5, 6, 9, 23, 25-27, 31-32, 35, 49 and 51-52 as being anticipated by Masui '079. Masui '079 neither discloses nor suggests that the "correction accuracy of the recording pulse position is determined to be any of a plurality of degrees of accuracies depending on the information recording conditions or the information recording characteristics that were identified in the identification step", as required by claim 1 or that the "recording pulse correction means determines correction accuracy of the recording pulse position to be any of a plurality of degrees of accuracies according to the information recording conditions or the information recording characteristics that are identified by the identification means", as required by claim 27.

The rejection cites ¶s[0038] and [0039] of Masui '079 as pertaining to the claimed determination of correction accuracy but Applicants disagree that these ¶s provide the alleged teaching. Masui '079 discloses that the width and the output timing of a recording pulse are corrected according to the pulse length/blank length. Masui '079 in ¶[0040] states that "[d]ata of the computed individual lengths L_0, L_1 and L_2 are inputted to the corrected value setting means 2, in which **corrected values of the pulse width and the output timing of the recording pulse** are set according to the recording data pattern based on these data." (Emphasis added) Applicants stress that correcting pulse width and output timing of the recording pulse are not the same thing as determining a correction accuracy of a recording pulse position, and as such, Masui '079 cannot anticipate claims 1 and 27. Another way to consider the differences is that Masui '079 corrects a recording pulse whereas Applicants claim a method that determines a degree of accuracy of the correction – similar to the difference between determining the values of a function and

determining a derivative of the function or the degree to which those values should be corrected

The machine/computer translation of Masui '079 ¶s[0038] and [0039] cited in the rejection is wrong. Applicants enclose a correct translation of ¶s[0038] and [0039] of Masui '079 and in view of the correct translation, request reconsideration of the claims and withdrawal of the rejection under 35 U.S.C. §102(b).

The rejection of claims 15-20, 24, 41-46, and 50 under 35 U.S.C. §103(a)

Applicants traverse the rejection of claims 15-20 and 41-46 as being obvious over Masui '079 and Seo '759, and claims 24 and 50 as being obvious over Masui '079 and Moritsugu '505. Masui '079 does not render Applicants claimed method of determining a degree of accuracy as obvious as explained herein, and Seo '759 and Moritsugu '505 do not complete the teachings of Masui '079 to sustain the rejection. Determination of the correction accuracy of the recording pulse position means to differentiate the extent of correction – again, consider the differences between a function and a first derivative of a function, or the differences between a first and second derivative of a function. By way of examples presented in the specification, the method allows selection from a plurality of tables having different numbers of correction accuracies for setting the edge position of the recording pulse, i.e., the method will select a particular table and then select a degree of accuracy from recording parameters of that table or select from a plurality of set resolutions when setting the edge position based on, e.g., a linear velocity during recording. Because the degree of accuracy of correction of a pulse position, rather correction of a pulse position, is selected, the invention is able to accommodate different recording densities and many different recording conditions and correct for these different parameters in a much shorter time, as explained in the specification. Masui '079 considers only three recording pulse lengths to correct a recording pulse whereas Applicants claimed invention considers information recording conditions or information recording characteristics to determine a degree of accuracy of correction. Seo '759 and Moritsugu '505 also do not determine a degree of correction accuracy based on information recording condition or information recording characteristics; thus, the claims

are not obvious in view of the combination of Masui '079 with these references because the claimed elements are not taught in the combination.

Applicants request that the rejection of claims 1, 5, 6, 9, 15-20, 23-27, 31, 32, 35, 41-46 and 49-52 be withdrawn because none of the references teach or suggest determination of a degree of accuracy to correct a recording pulse position. If a telephone conference would be helpful in resolving any issues concerning this communication and that would expedite issuance of a patent, the Examiner is requested to telephone Applicants' primary attorney, Mr. Douglas P. Mueller, Reg. No. 30,300 at 612.455.3804.

Respectfully submitted,

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PARTIAL TRANSLATION OF JP 5(1993)-234079 A

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Title of Invention: Mark Edge Recording Method and its Device

[Page (5) col. 7 line 26 – col. 8 line 26]

[0037]

[Examples] A first example of the present invention will be described based on FIGs. 1 to 3. By correcting a pulse width and an output timing of a recording pulse and further a power of the recording pulse at the time of rising as well as a length that this recording power is changed according to a recording data pattern, the present example controls an edge position of a recording mark and further a mark shape in a highly precise manner, and the method for correcting them will be described referring to FIG. 1.

[0038] First, at the time of writing data by a mark edge recording method, if the data are converted into an NRZI code (an Non Return to Zero Inverted code) and recorded as they are without any correction, a recording mark is written in such a manner as to be longer than that in the ideal state as described earlier (the upper portion in FIG. 1 shows this as an actual recording mark). Thus, the present example corrects such a recording pulse according to a recording data pattern and controls the edge position of the recording mark to be located at the ideal position. For example, when the pulse length of a targeted recording pulse that is to be written is indicated by L_0, the blank length immediately before this recording pulse is indicated by L_1 and the length of a recording pulse immediately before that recording pulse is indicated by L_2, these lengths L_0, L_1 and L_2 are computed. According to these computed lengths L_0, L_1 and L_2, a pulse width and an

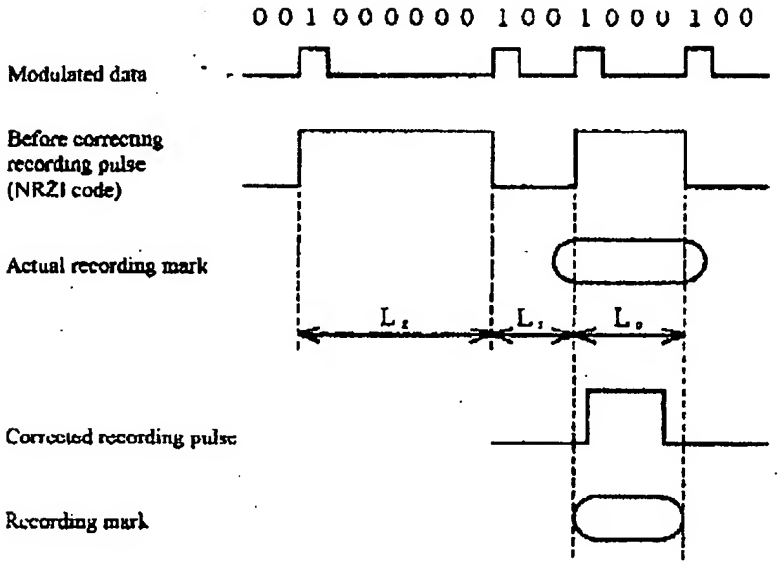
output timing of the targeted recording pulse are corrected, thereby controlling the edge position of the recording mark.

[0039] Such a correction method is achieved by the configuration shown in FIG. 2. Roughly speaking, the configuration includes a recording data pattern identification means 1, a corrected value setting means 2 and a recording pulse correcting means 3. First, as a precondition, input data transmitted from a controller (not shown) are modulated into modulated data by a modulator (not shown). This may be conducted by any modulation technique, for example, a (2, 7) RLL code (Run Length Limited code), a (1, 7) RLL code, etc. Here, the present example does not output the NRZI code as it is from the modulator but outputs the modulated data of the NRZI code, and uses them as an input to make a correction according to a data pattern of the modulated data, thus outputting a recording pulse of the NRZI code.

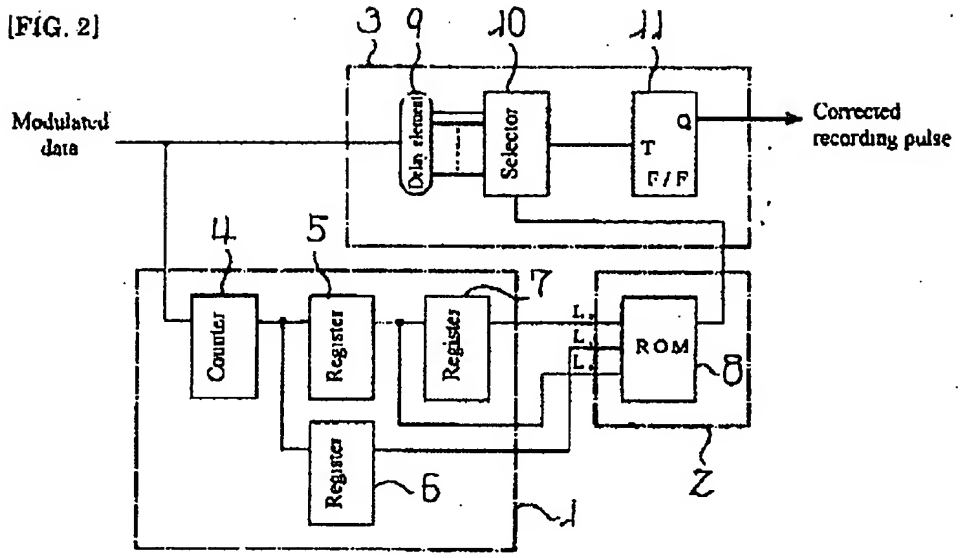
[0040] These modulated data are inputted to the recording data pattern identification means 1, in which the individual lengths L_0, L_1 and L_2 mentioned above are computed. Data of the computed individual lengths L_0, L_1 and L_2 are inputted to the corrected value setting means 2, in which corrected values of the pulse width and the output timing of the recording pulse are set according to the recording data pattern based on these data. For example, an output timing of a forward edge of the recording pulse and an output timing of a rear edge thereof are set, and the pulse width is determined from these two timings. Based on these corrected values, the recording pulse correcting means 3 corrects the recording pulse, sends out corrected recording pulse information to a laser driving circuit (not shown) and causes a semiconductor laser (not shown) to flash, thereby forming the recording mark on an optical recording medium.

[Pages (9) – (10)]

[FIG. 1]



[FIG. 2]



[FIG. 3]